IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jeff EDER

Serial No.: 08/999,245

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For: A method of and system for analyzing, modeling and valuing elements of a business enterprise

Group Art Unit: 3692

Customer Number: 53787

Examiner: Frantzy Poinvil

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20321

Brief on Appeal

Sir or Madam:

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Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.)

Related appeals

An appeal for U.S. Patent Application 09/761,670 filed January 18, 2001 may be affected or have a bearing on this appeal. An appeal for U.S. Patent Application 09/761,671 filed January 18, 2001 may be affected or have a bearing on this appeal. U.S. Patent Application 10/282,113 filed October 29, 2002 may be affected or have a bearing on this appeal.

Status of Claims

Claims 44 – 59 and 65 - 81 are rejected and are the subject of this appeal. Claims 44, 47, 53, 65, 67, 71 and 77 are amended. Claims 1 – 43 and 60 – 64 are cancelled without prejudice. Claim 82 is withdrawn because of a restriction requirement.

Status of Amendments

An Amendment/Reply containing the amendments to claims 44, 47, 53, 65, 67, 71 and 77 was submitted on November 30, 2007.

Summary of Claimed Subject Matter

One embodiment of a method of and system for analyzing, modeling and valuing elements of a business enterprise according to the present invention is best depicted in Figures 1 – 15 of the specification for the instant application. Figure 1 gives an overview of the major processing steps which include converting and storing data from a plurality of database management systems for use in analysis, analyzing the data as required to: optionally value growth options, identify value drivers by element of value, develop a predictive model for each component of enterprise value and value the elements of value.

Independent Claim 44 - One embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 44 where an article of manufacture guides the conversion and storage of data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value. The model of enterprise cash flow by element and component of value is then used to determine the current operation value of one or more elements of value. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the attributes of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified attributes are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the

components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The models used to determine the value impact of each element of value are also use for: predicting an impact of a change to one or more elements of value on enterprise cash flow, identifying a set of changes to one or more elements of value that will optimize enterprise cash flow and producing financial statements that identify value and value changes by element of value.

Dependent claims

The limitations associated with dependent claim 45 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 46 are described in several places including line 16, page 56 through line 9, page 59 of the specification.

The limitations associated with dependent claim 47 are described in several places including table 1, page 9, and Table 16, page 31 of the specification.

The limitations associated with dependent claim 48 are described in line 1, page 26 through line 14, page 26.

The limitations associated with dependent claim 49 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 50 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 51 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 52 are described in a variety of places including FIG. 10.

Independent Claim 53 - A second embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 53 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to calculate the current operation value contribution for each element of value. More specifically, data from the database management

systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the attributes of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified attributes are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The calculated values are then used to produce financial statements that include the calculated current operation values for the element of values as described in FIG. 13 reference number 802 – 806 and line 26, page 65 through line 32, page 67.

Dependent claims

The limitations associated with dependent claim 54 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 55 are described in several places including table 1, page 9, and Table 16, page 31 of the specification.

The limitations associated with dependent claim 56 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 57 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 58 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 59 are described in several places including FIG. 10.

Independent Claim 65 - A third embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 65 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is then used to identify and optimal set of changes to the elements of value. More specifically, data from the database management systems associated with a plurality of enterprise transaction systems are aggregated and stored in one or more tables or files in accordance with a network schema as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify one or more performance indicators for each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified performance indicators are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The component of value models are then optimized using genetic algorithms as described using reference numbers 325, 330, 335, 340, 345, 350 and 355 from FIG. 6A to identify changes to the elements of value that will optimize performance. Cross referenced

U.S. Patent 5,615,109 also describes an alternate method that could be used for identifying an optimal set of changes to the elements of value.

Dependent claim

The limitations and activities associated with dependent claim 66 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification. The activities comprise identifying a common set of attributes in a plurality of data dictionaries and aggregating data from a plurality of database management systems in accordance with said common attributes.

Independent Claim 67 - A fourth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 67 where an article of manufacture guides conversion and storage of event data from a plurality of management systems into an application database for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to forecast an impact of a response to an event. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the attributes of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified attributes are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as to develop neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. Event data are then input to the neural network models of cash flow by component of value as required to forecast an impact of one or more events on financial

performance in a manner that is well known. An optimal response can be identified using the method detailed above for claim 65.

Dependent claims

The limitations associated with dependent claim 68 are described in several places including FIG. 10.

The limitations associated with dependent claim 69 are described in several places including FIG. 10.

The limitations associated with dependent claim 70 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

Independent claim 71 - A fifth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 71 where a machine converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value. The model of enterprise cash flow by element and component of value is then used to determine the current operation value of one or more elements of value. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the attributes of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified attributes are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described

in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification. The models used to determine the value impact of each element of value are also use for: predicting an impact of a change to one or more elements of value on enterprise cash flow, identifying a set of changes to one or more elements of value that will optimize enterprise cash flow and producing financial statements that identify value and value changes by element of value.

Dependent claims

The limitations associated with dependent claim 72 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification. It is well known to those of average skill in the art that the databases for the listed systems are typically relational database systems.

The limitations associated with dependent claim 73 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 74 are described in several places including table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

The limitations associated with dependent claim 75 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 76 are described in several places including line 12, page 8 through line 22, page 8 of the specification.

Independent claim 77 A sixth embodiment of the system for analyzing, modeling and valuing elements of a business enterprise is exemplified in independent claim 77 where a process converts and stores data aggregated from a plurality of management systems in accordance with a common schema for use in processing. The aggregated data are then used to develop a model of enterprise cash flow by element of value and component of value that is used to calculate the current operation value contribution for each element of value. More specifically, data dictionaries from the database management systems associated with a plurality of enterprise transaction systems are obtained, relationships between the newly obtained data dictionaries and an application data dictionary are identified, these relationships are then used to guide the conversion

and storage of data in one or more tables or files in accordance with a common schema in a common database as described FIG. 1 reference number 200, FIG. 5A reference numbers 201 - 213, FIG. 5B reference numbers 221 – 223, 225 – 230, FIG. 10 reference numbers 710 – 1 through 710 – n, 720-1 through 720 – n and 730 and line 16, page 18 through line 16, page 35 of the specification. The aggregated data are then analyzed using a series of models in order to identify the attributes of each element of value that contribute to the value of each component of value and identify sub-elements of value for each element of value. The identified attributes are then used to develop element and sub-element of value impact summaries in accordance with the procedure detailed in FIG. 6A reference number 302 - 305, 306 – 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6B reference numbers 312 - 315, 325, 330, 335, 340, 345, 350 and 355, FIG. 6C reference numbers 319, 321 - 323, 326 - 329, 332 and 375 , FIG. 6D reference numbers 337 - 339, 341 - 343, 305, 309, 325, 330, 335, 340, 345, 350 and 355, FIG. 6E reference numbers 352 - 354, 315, 325, 330, 335, 340, 345, 350 and 355, and line 15, page 35 through line 14, page 53 of the specification. The capitalized value of the components of value and the current operation are then determined as shown in FIG. 8 reference number 503 – 512, 514 and 515 and line 18, page 56 through line15, page 59 of the specification. The previously identified element of value impact summaries are then used as inputs to neural network models of the components of value (revenue, expense and capital change) as described in FIG. 9A reference numbers 325, 330, 335, 340, 602 - 604, 625 and 630, FIG. 9B reference numbers 325, 330, 335, 340, 605, 607, 608, 625 and 630, FIG. 9C reference 325, 330, 335, 340, 611, 613, 614, 625 and 630 and line 16, page 59 through line 5, page 62 of the specification. The weights from the neural network models are then used to determine the percentage of each component of value that is caused by the impact of each element of value before the percentages are combined with the capitalized values of the components of value to determine the current operation value contribution of each element of value as described in FIG. 12 reference number 772 - 782 and line 7, page 62 through line 25, page 65 of the specification.

Dependent claims

The limitations associated with dependent claim 78 are described in several places including FIG. 1, reference number 25 and line 15, page 12 through line 16 page 12 of the specification.

The limitations associated with dependent claim 79 are described in several places including FIG. 1, reference number 5 and line 20, page 12 of the specification.

The limitations associated with dependent claim 80 are described in several places including FIG. 5A reference numbers 205, 206 and 207, table 1, page 9, Table 12, page 25 and Table 16, page 31 of the specification.

The limitations associated with dependent claim 81 are described in table 1, page 9, Table 16, page 31 and line 20, page 18 through line 14, page 26 of the specification.

Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable under 35 USC 103(a) over U.S. Patent 4,989,141 (hereinafter, Lyons) with consideration to Database Management by Gordon C. Everest (hereinafter, Everest) ?

Issue 2 - Whether claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 3 - Whether claim 65 and/or claim 66 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 4 - Whether claim 67, claim 68, claim 69 and/or claim 70 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 5 - Whether claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

Issue 6 - Whether claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. The primary reason is that the cited combination of documents and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Limitations not taught or suggested by the cited combination include:

1) Claim 44 (affects all of the claims under this issue, affects claims 45, 47, 51 and 52 directly). Limitations not taught or suggested include:

a) using a series of models to identify one or more attributes for each of one or more elements of value that contribute to one or more components of value,

b) creating a summary of the attributes for each element of value,

c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,

d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

e) predicting an impact of a change to one or more elements of value on enterprise cash flow,

f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,

g) removing data associated with enterprise growth options, and

h) using a series of models.

As detailed below, Everest and Lyons both teach and rely on the use of a plurality of user-schemas. Lyons also teaches away from the claimed analysis and modeling in a number of ways as detailed under reason #2.

2) Claim 46 (also affects claim 48 directly). Limitations not taught or suggested include a change in capital.

3) Claim 47. Limitations not taught or suggested include elements of value selected from the group consisting of brands, customers, employees, strategic partnerships and vendor relationships. It is well known to those of average skill in the art that the balance sheets manipulated by Lyons do not include the elements of value listed above. Everest has no relevant teachings.

4) Claim 52. Limitations not taught or suggested include a common network schema.

Reason # 2 - The second reason that claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable is that the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983))*." Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the use of a series of models to identify: attributes for use in element of value modeling and a net contribution to cash flow for each element of value (see claim 44). Lyons teaches away from this approach in several ways:
a) by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38);
b) by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50);
c) by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2); and
d) by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

2) The claimed invention relies on the aggregation of data from a plurality of database management systems (see claim 44). Everest teaches away by relying on the use of a single, centrally controlled, database management system for an entire enterprise (Everest, page 37 see page 43, Evidence Appendix) "*a shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data;*

3) The claimed invention teaches the development and use of a model of enterprise cash flow to identify a contribution and a value for elements of value such as brands, customers, employees, production equipment strategic partnerships and vendor relationships (see claim 44 and claim 47). Lyons teaches away from this approach in several ways:

a) by teaching and relying on the use of data from balance sheets that value financial assets and tangible elements of value such as production equipment on a historical cost basis (a fact well known to those of average skill in the art); and

b) by teaching and relying on the use of a balance sheet that does not include brands, customers, employees, strategic partnerships and vendor relationships (a fact well known to those of average skill in the art).

4) The claimed invention teaches the use of a common schema (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database….The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability* (page 44, Evidence Appendix and Lyons C7, L 62 – C8, L55);

5) The claimed invention teaches the development and use of a model of enterprise cash flow by component of value and element of value (see claim 44 and claim 47). Lyons teaches away by teaching and relying on the use of a traditional cash flow statement that teach that the elements of value are not the source of cash flow (a fact well known to those of average skill in the art).

Reason # 3 - The third reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable is that the combination of teachings described in the cited combination would force a change the principle of operation of at least one of the inventions described in the cited documents. *MPEP 2143.01 provides that when "the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)".* The Lyons invention was developed to allow end users to complete four dimensional analyses of financial data. The Lyons specification clearly states that the unconventional data storage methods it uses is the one of the principles of operation that enables this type of analysis. *Unlike conventional data base management systems or worksheet applications, the Lyons invention allows for a four dimensional analysis of all financial data. In particular, the data stored in the system is organized into four business classifications or dimensions, namely Schedule, Entity, Period and Type (SEPT)* (Lyons C4, L 17 – 23). This unconventional data storage method creates massive redundancy that provides some end-user benefits. Furthermore, the data input and output functions of the Lyons invention rely on these data storage principles to complete their defined functions. This method of data storage and retrieval is also particularly well suited to filling the cells in spreadsheets – one of the primary uses of the Lyons invention (Lyons, C1, L 20 – C2, L 66). By way of contrast, one of the principles of operation for the database management systems described by Everest is a reliance on a conventional data storage structure that can be used to manage data with minimal redundancy. Everest listed the data structures used for conventional data storage in a taxonomy (Everest page 121, see page 46, Evidence Appendix).

If the Lyons invention were modified to the incorporate the conventional data storage principle of operation taught by Everest, then a principle of operation of the Lyons invention would be changed. Alternatively, if the database management systems of Everest were modified to utilize the unconventional data storage principle of operation taught by Lyons, then a principle of operation of the Everest database management systems would be changed. Because the cited combination requires a change in a principle of operation of at least one of the cited inventions, the teachings of the documents are not sufficient to render the claims prima facie obvious.

Reason #4 - The fourth reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable is that the Examiner has not been able to explain the rationale for combining the Everest and Lyons teachings to replicate the functionality of the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).'"* In particular, the Examiner has not explained why the conventional database management systems taught by Everest should be combined with the Lyons invention. The Lyons specification clearly states that conventional database management systems do not support the four dimensional data analyses that the Lyons system was created to produce (Lyons C4, L 17 – 23).

Reason #5 - The fifth reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable is Reason #3 listed under issue #2.

Reason #6 – The sixth reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and/or claim 52 are patentable is Reason #4 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. This failure provides additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Reason #7 - The seventh reason claim 44, claim 45, claim 46, claim 47, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the claim rejections fail under both standards of the APA and are therefore moot. The claim rejections would fail under the substantial evidence standard because a prima facie case supporting claim rejection has not been presented (as noted above under reasons #1 – 6 above). The claim rejections would fail under the arbitrary and capricious standard of the APA because the U.S.P.T.O. has previously found the discovery of indicators, which are a similar to attributes, for a customer element of value to be novel, non-obvious (see U.S. Patent 7,092,920). Unfortunately, this is not the first instance of arbitrary and capricious claim rejection.

Issue 2 - Whether claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. The primary reason is that the cited combination and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).* Limitations not taught or suggested by the cited combination include:

1) Claim 53 (affects all of the claims under this issue, affects claims 54, 56, 57, 58 and 59 directly). Limitations not taught or suggested include:
a) using a series of models to identify one or more attributes for each of one or more elements of value that contribute to one or more components of value,
b) creating a summary of the attributes for each element of value,
c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,
d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,
e) predicting an impact of a change to one or more elements of value on enterprise cash flow,
f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,
g) a network model of actual and forecast cash flow,
h) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets,
i) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others,
j) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others where a selective crossover produces a chromosome exchange between the subsets, and
k) where the selective crossover occurs between two or more successive generations
l) removing data associated with enterprise growth options, and
m) using a series of models.

As detailed below, Everest and Lyons both teach and rely on the use of a plurality of user-schemas. Lyons also teaches away from the claimed analysis and modeling in a number of ways as detailed under reason #2.

2) Claim 55. Limitations not taught or suggested include elements of value selected from the group consisting of brands, customers, employees, strategic partnerships and vendor relationships. It is well known to those of average skill in the art that the balance sheets manipulated by Lyons do not include the elements of value listed above. Everest has no relevant teachings.

3) Claim 56. Limitations not taught or suggested include forecast event data and historical event data.

4) Claim 59. Limitations not taught or suggested include a common network schema.

Reason #2 - The second reason that claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #2 under issue #1.

Reason #3 – The third reason claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is that the proposed combination would destroy the ability of the inventions described by the cited documents to function. It is well established that: *when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the prima facie cause of obviousness cannot be properly made (In re Gordon 733 F.2d 900, 221 U.S.PQ 1125 Fed Circuit 1984).* The Everest document teaches conventional database management systems. These conventional database management systems rely on logical data structures that enable enterprise wide data management with minimal redundancy. Everest lists the data structures used for conventional data storage in a taxonomy (page 46, Evidence Appendix). The key function of the Lyons invention is the four dimensional analysis of financial schedule data. The Lyons specification clearly states that the unconventional data storage method it uses is the key to enabling this type of analysis. *Unlike conventional database management systems or worksheet applications, the Lyons invention allows for a four dimensional analysis of all financial data. In particular, the data stored in the system is organized into four business classifications or dimensions, namely Schedule, Entity, Period and Type (SEPT)* (Lyons C4, L 17 – 23). This data storage method creates massive redundancy that provides some end-user benefits. Data is read from the datastore by various report and spreadsheet generating functions which convert data associated with particular SEPT values to desired output formats (Lyons, C2, L 58 – 61). Modifying the Lyons invention to use the conventional database management systems taught by Everest would destroy the ability of the report and spreadsheet generating functions to support a four dimensional analysis. In a similar manner, modifying the Everest database management systems to use the unconventional Lyons method for data storage would destroy the ability of the Everest database management systems to support the enterprise wide management of all types of data without creating massive redundancy. Because the cited

combination would destroy the ability of at least one of the cited inventions to function, the teachings of the documents are not sufficient to render the claims prima facie obvious.

Reason #4 - The fourth reason claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is that the cited combination would require a change in one or more principles of operation of at least one of the inventions described in the cited documents. *MPEP 2143.01 provides that when "the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)".* Changes in principle that would be required include a change in end-user control principle. Consistent with its function of using four-dimensional financial data analysis to enable users to create reports, end-user control is one of the principles of operation of the Lyons invention. This principle dictated the development of a software package that includes features such as:

a) *User-controlled data dictionaries*. Each data dictionary in the Lyons invention has the simplest possible function – it defines one type of data (Lyons, C7, L 62 – C8, L55). Lyons teaches that five (5) of these separate, simple, user-controlled data dictionaries are required for system operation (along with one optional data dictionary);

b) *High levels of data redundancy*. The SEPT values defined by the user (see a above) are used to identify each piece of data that will be stored and processed by the Lyons invention (Lyons, C2, L 35 – 50, C4, L 20 - 43). As described in the Lyons specification, this method of data storage provides end user benefits but it also creates a massive redundancy in data storage; and

c) U*ser-controlled data management*. Consistent with its goal of providing user defined capabilities for creating reports, the Lyons invention provides each user with a number of functions for flexibly defining and managing the way stored data are organized.

At the same time, the conventional database management systems described by Everest are designed to support hundreds of input screens, reports and files and thousands of data items. Because of this, the Everest system emphasizes comprehensive, centralized control in order to maximize efficiency and stability. Everest specifically states that: "a shared database environment requires central control to coordinate the collection and use of data" (see page 43, Evidence Appendix). If the Lyons invention were modified to the incorporate centralized control principle taught by Everest, then the end-user control principle of operation of the Lyons invention would be changed. Alternatively, if the database management system of Everest were modified to utilize the end-user control principle of data management taught by Lyons, then the central control principle of operation of the Everest database management system would be changed. Because the cited combination requires a changes the principle of operation of at least one of the cited inventions, the teachings of the documents are not sufficient to render the claims prima facie obvious.

Reason #5 - The fifth reason claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #3 listed under issue #1.

Reason #6 - The sixth reason claim 53, claim 54, claim 55, claim 56, claim 57, claim 58 and/or claim 59 are patentable is Reason #4 listed under issue #1.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. The Appellant respectfully submits that the claims are also patentable for the Reason #7 listed under issue #1.

Issue 3 - Whether claim 65 and claim 66 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 65 and/or claim 66 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 65 (also affects claim 66 directly). Limitations not taught or suggested include:

a) using neural network models to identify one or more performance indicators for each of one or more elements of value,

b) identifying one or more value drivers from said indicators,

c) identifying one or more value drivers from said indicators and defining a contribution summary for each element of value for each component of value using said value drivers,

d) creating a model of current operation financial performance by element and component of value using said contribution summaries, and

e) simulating a current operation financial performance using said model as required to identify changes by element of value that will optimize one or more aspects of current operation financial performance

f) automatically aggregating enterprise related event data from a plurality of database management systems into files or tables in a common database, and

g) converting the data into a format that supports a common schema for analyzing and modeling an enterprise.

2) Claim 66. Limitations and activities not taught or suggested include:
a) using a common data dictionary to identify a common set of attributes in the enterprise related data from the plurality of database management systems, and
b) identifying common attributes and automatically integrating data from a plurality of database management systems.

Reason # 2 - The second reason that claim 65 and/or claim 66 are patentable is because the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the use of a common schema (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database.…The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability* (page 44, Evidence Appendix and Lyons C7, L 62 – C8, L55);

2) The claimed invention teaches the use of neural network models to identify: indicators for use in element of value modeling and a net contribution to current operation value for each element of value (see claim 65). Lyons teaches away from this approach in several ways:
a) by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38);
b) by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50);
c) by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2); and
d) by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

3) The claimed invention relies on the aggregation of data from a plurality of database management systems (see claim 65). Everest teaches away by relying on the use of a single, centrally controlled, database management system for an entire enterprise (Everest, page 37, see page 43, Evidence Appendix) "*a shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data*";

4) The claimed invention teaches the conventional storage of data in files or tables (see claim 65 and 66). Lyons teaches away by teaching and relying on an unconventional data storage method where all data associated with a particular Schedule, Entity, Period and Type (SEPT) are identified by a SEPT value and all data associated with a particular SEPT value are stored in a predetermined pattern relative to the SEPT value in a single, central datastore (Lyons, C2, L45 – 50). Lyons teaches that this unconventional data storage method enables the four dimensional analysis of data.

5) The claimed invention teaches the development and use of a model of current operation cash flow by component of value and element of value (see claim 65). Lyons teaches away by teaching and relying on the use of a traditional cash flow statement that teach that the elements of value are not the source of cash flow (a fact well known to those of average skill in the art).

6) References provided by the Appellant (Rappaport) and the U.S.P.T.O. (Bielinski) teach away from the method of value driver identification and use incorporated in the claimed invention in a number of ways (see Evidence Appendix, pages 47 – 49 for a summary).

Reason #3 - The third reason claim 65 and claim 66 are patentable is Reason #3 listed under issue #1.

Reason #4 – The fourth reason claim 65 and claim 66 are patentable is Reason #4 listed under issue #1.

Reason #5 - The fifth reason claim 65 and claim 66 are patentable is Reason #3 listed under issue #2.

Reason #6 - The sixth reason claim 65 and claim 66 are patentable is Reason #4 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. This failure provides additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Reason #7 - The seventh reason claim 65 and claim 66 are patentable is that the claim rejections fail under both standards of the APA and are therefore moot. The claim rejections would fail under the substantial evidence standard because a prima facie case supporting claim rejection has not been presented (as noted above under reasons #1 – 6 above). The claim rejections would fail under the arbitrary and capricious standard of the APA because the U.S.P.T.O. has previously found the discovery of indicators for a customer element of value to be novel, non-obvious (see U.S. Patent 7,092,920). Unfortunately, this is not the first instance of arbitrary and capricious claim rejection.

Issue 4 - Whether claim 67, claim 68, claim 69 and/or claim 70 are patentable under 35 USC 103(a) over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 67, claim 68, claim 69 and/or claim 70 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 67 (also affects claims 68, claim 69 and 70 directly). Limitations not taught or suggested include:
a) using a series of models to identify one or more attributes for each of one or more elements of value that contribute to one or more components of value,
b) creating a summary of the attributes for each element of value,
c) developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,
d) aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,
e) predicting an impact of a change to one or more elements of value on enterprise cash flow,
f) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,
g) a network model of actual and forecast cash flow,
h) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets,
i) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others,
j) a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a genetic algorithm independently of the others where a selective crossover produces a chromosome exchange between the subsets, and
k) where the selective crossover occurs between two or more successive generations
l) removing data associated with enterprise growth options,
m) using a series of models,
n) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

o) converting said data source data to a common schema by using said relationships in an application software segment,
p) storing said converted event data in an application database for use in processing,
q) forecast an impact of a response to one or more events from the plurality of events, and
r) identify an optimal response to one or more events from the plurality of events

2) Claim 68. Limitations not taught or suggested include a common schema that is defined by an application database schema.

3) Claim 69. Limitations not taught or suggested include a common schema that further comprises a network schema.

Reason # 2 - The second reason that claim 67, claim 68, claim 69 and/or claim 70 are patentable is because the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: *"in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983))."* Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the use of an application software segment to convert data (see claim 67). Everest teaches that the conversion of data is a database function (Everest page 409, see page 45, Evidence Appendix) *"it is highly desirable for data conversion to be performed by the same underlying modules in the database control system"*;

2) The claimed invention teaches the use of a series of models to identify: attributes for use in element of value modeling and a net contribution to cash flow for each element of value (see claim 53/67). Lyons teaches away from this approach in several ways:
a) by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38);
b) by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50);
c) by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2); and
d) by storing data in an unconventional manner that is designed to support four dimensional data analysis and spreadsheets (Lyons, C1, L 20 – C2, L 66).

3) The claimed invention relies on the aggregation of data from a plurality of database management systems (see claim 53/67). Everest teaches away by relying on the use of a single, centrally controlled, database management system for an entire enterprise (Everest, 37 see page

45, Evidence Appendix) "*a shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data*";

4) The claimed invention teaches the use of a common schema (see claim 67). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database....The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability* (page 44, Evidence Appendix *and* Lyons C7, L 62 – C8, L55);

5) The claimed invention teaches the development and use of a model of enterprise cash flow by component of value and element of value. Lyons teaches away by teaching and relying on the use of a traditional cash flow statement that teach that the elements of value are not the source of cash flow (a fact well known to those of average skill in the art).

Reason #3 - The third reason claim 67, claim 68, claim 69 and/or claim 70 are patentable is Reason #3 listed under issue #1.

Reason #4 – The fourth reason claim 67, claim 68, claim 69 and/or claim 70 are patentable is Reason #4 listed under issue #1.

Reason #5 - The fifth reason claim 67, claim 68, claim 69 and/or claim 70 are patentable is Reason #3 listed under issue #2.

Reason #6 - The sixth reason claim 67, claim 68, claim 69 and/or claim 70 are patentable is Reason #4 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. The Appellant respectfully submits that the claims are also patentable for the Reason #7 listed under issue #1.

Issue 5 - Whether claim 71, claim 72, claim 73, claim 74, claim 75 and claim 76 are patentable over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the*

prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Claims with limitations not taught or suggested by the cited combination include:

1) Claim 71 (affects claims 72, claim 73, claim 74, claim 75 and 76 directly). Limitations not taught or suggested include:

a) analyzing data with a series of models to identify one or more attributes for each of one or more elements of value that impact one or more components of value and a value of the element of value

b) analyzing data with a series of models to identify one or more attributes for each of one or more elements of value that impact one or more components of value and a value of the element of value and create a summary of said attributes,

c) developing a model of an actual and a forecast enterprise cash flow by a component of value and element of value using said summaries,

d) using the model to calculate a current operation value contribution for each of one or more elements of value,

e) obtaining a plurality of data dictionaries and event data from a plurality of data sources via a network connection,

f) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

g) converting said data source data to a common schema by using said relationships in an application software segment,

h) storing said converted event data in an application database for use in processing,

i) predicting an impact of a change to one or more elements of value on enterprise cash flow,

j) identifying a set of changes to one or more elements of value that will optimize enterprise cash flow,

k) elements of value selected from the group consisting of brands, customers, employees, partnerships, vendor relationships and combinations thereof,

l) modeling cash flow only after removing data associated with all enterprise growth options, and

m) where the cash flow for each element of value by a component of value comprises a net cash flow comprised of an element of value contribution to each component of value net of its impact on one or more other elements of value.

2) Claim 74. Limitations not taught or suggested include database management systems that are obtained from the group consisting of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, an Intranet and combinations thereof. Everest teaches the use of a single database management system and does not mention an Intranet. Lyons teaches the use of data from systems that produce financial schedules (basic and advanced financial systems) and does not mention an Intranet.

3) Claim 75. Limitations not taught or suggested include elements of value and components of value.

4) Claim 76. Limitations not taught or suggested include the automated conversion of data.

Reason # 2 - The second reason that claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is because the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983))*." Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited combination teaching away from the claimed invention include:

1) The claimed invention teaches the use of an application software segment to convert data (see claim 71). Everest teaches that the conversion of data is a database function (see page 45, Evidence Appendix) *"it is highly desirable for data conversion to be performed by the same underlying modules in the database control system"*;

2) The claimed invention teaches the use of a series of models to identify: attributes for use in element of value modeling and a net contribution to cash flow for each element of value (see claim 44). Lyons teaches away from this approach in several ways:

a) by teaching that the user - not a model or series of models - is responsible for identifying the relationships between the data being analyzed (Lyons, C27, L25 – 38);

b) by limiting data storage after external processing to data that appears in a report format (Lyons, C2, L46 - 50);

c) by limiting other programs to processing financial schedule data stored in the datastore (Lyons C20, L62 – C21, L2); and

d) by storing data in an unconventional manner that is designed to support spreadsheets and four dimensional data analysis (Lyons, C1, L 20 – C2, L 66).

3) The claimed invention relies on the aggregation of data from a plurality of database management systems (see claim 44). Everest teaches away by relying on the use of a single, centrally controlled, database management system for an entire enterprise (Everest, page 37, see page 43, Evidence Appendix "*a shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data*");

4) The claimed invention teaches the development and use of a model of enterprise cash flow to identify a contribution and a value for elements of value such as brands, customers, employees, production equipment strategic partnerships and vendor relationships (see claim 44 and claim 47). Lyons teaches away from this approach in several ways:

a) by teaching and relying on the use of data from balance sheets that value financial assets and tangible elements of value such as production equipment on a historical cost basis (a fact well known to those of average skill in the art); and

b) by teaching and relying on the use of a balance sheet that does not include brands, customers, employees, strategic partnerships and vendor relationships (a fact well known to those of average skill in the art).

5) The claimed invention teaches the use of a common schema (see claim 44). Everest and Lyons both teach and rely on the use of a plurality of user schemas. *The userschema may use different data names, reflect a different data structure and refer to only portions of the database….The userschema is the fundamental component of a DBMS architecture for achieving sharability and evolvability* (page 44, Evidence Appendix and Lyons C7, L 62 – C8, L55);

6) The claimed invention teaches the development and use of a model of enterprise cash flow by component of value and element of value where the elements of value are brands, customers, employees, strategic partnerships and vendor relationships (see claim 44 and claim 47). Lyons teaches away by teaching and relying on the use of a traditional cash flow statement that teach that the elements of value are not the source of cash flow (a fact well known to those of average skill in the art).

Reason #3 - The third reason claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #3 listed under issue #1.

Reason #4 – The fourth reason claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #4 listed under issue #1.

Reason #5 - The fifth reason claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #3 listed under issue #2.

Reason #6 - The sixth reason claim 71, claim 72, claim 73, claim 74, claim 75 and/or claim 76 are patentable is Reason #4 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. The Appellant respectfully submits that the claims are also patentable for the Reason #7 listed under issue #1.

Issue 6 - Whether claim 77, claim 78, claim 79, claim 80 and claim 81 are patentable over Lyons with consideration to Everest?

The claims are patentable for several reasons. One of the primary reasons is that the cited combination and the arguments related to the cited combination fail to establish a prima facie case of obviousness in a number of ways for every rejected claim.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that would support the rejection of claim 77, claim 78, claim 79, claim 80 and/or claim 81 is that the cited combination does not teach or suggest one or more of the limitations for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Claims with limitations not taught or suggested by the cited combination include:

1) Claim 77 (also affects claims 78, claim 79, claim 80 and claim 81 directly). Limitations not taught or suggested include:

a) analyzing data with a series of models to identify one or more attributes for each of one or more elements of value that impact one or more components of value and a value of the element of value,

b) analyzing data with a series of models to identify one or more attributes for each of one or more elements of value that impact one or more components of value and a value of the element of value and create a summary of said attributes,

c) developing a model of an actual and a forecast enterprise cash flow by a component of value and element of value using said summaries,

d) using the model to calculate a current operation value contribution for each of one or more elements of value,

e) obtaining a plurality of data dictionaries and event data from a plurality of data sources via a network connection,

f) identifying one or more relationships between each data source data dictionary and an application database data dictionary,

g) converting said data source data to a common schema by using said relationships in an application software segment,

h) storing said converted event data in an application database for use in processing,

i) modeling financial performance only after removing data associated with all enterprise growth options,

j) a common network schema,

k) a series of models,

l) a plurality of data sources that comprise database management systems for a plurality of enterprise transaction systems, and

m) identifying one or more changes by element of value that will optimize one or more aspects of current operation financial performance.

2) Claim 78. Limitations not taught or suggested include a back-end interface that comprises a network connection. Everest teaches the use of a separate computer for a back-end interface.

3) Claim 79. Limitations not taught or suggested include accessing, converting, integrating and storing data from an Internet.

4) Claim 80. Limitations not taught or suggested include elements of value and components of value.

5) Claim 81. Limitations not taught or suggested include database management systems that are obtained from the group consisting of operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, an Intranet and combinations thereof. Everest teaches the use of a single database management system and does not mention an Intranet. Lyons teaches the use of data from systems that produce financial schedules (basic and advanced financial systems) and does not mention an Intranet.

Reason # 2 - The second reason that claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason # 2 listed under issue #5.

Reason #3 - The third reason claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #3 listed under issue #1.

Reason #4 – The fourth reason claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #4 listed under issue #1.

Reason #5 - The fifth reason claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #3 listed under issue #2.

Reason #6 - The sixth reason claim 77, claim 78, claim 79, claim 80 and/or claim 81 are patentable is Reason #4 listed under issue #2.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. The Appellant respectfully submits that the claims are also patentable for the Reason #7 listed under issue #1.

Conclusion

As detailed above, the evidence used to support the art rejections of the pending claims consists of a document combination that fails to support an obviousness rejection for a single claim. For this reasons and the reasons listed below, the Appellant respectfully but forcefully contends that each claim is patentable.

The Appellant notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA and 35 USC 3. Among other things, the Appellant specifically notes that:

a) There appears to have been numerous instances of non-compliance with MPEP 904.03;

b) The prosecution of the instant application has been substantially delayed for a variety of reasons. At least part of the delay appears to have occurred because the Examiner refused to respond to reasonable requests for a copy of a missing office action; and

c) The prior art review for the instant application appears to have been completed under a different standard than that used for the review and allowance of other, similar applications.

Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,

/B.J. Bennett/

B.J. Bennett, President, Asset Trust, Inc.
Dated: February 3, 2008

44. A program storage device readable by a computer, tangibly embodying a program of instructions executable by at least one computer to perform a data method, the method comprising:

aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

storing said aggregated data in one or more tables or files to support processing,

analyzing at least a portion of said data with a series of models to identify one or more attributes for each of one or more elements of value that contribute to one or more components of value and create a summary of said attributes for each element of value,

developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries, and

using the model to calculate a current operation value contribution for each of one or more elements of value and complete tasks selected from the group consisting of predicting an impact of a change to one or more elements of value on enterprise cash flow and identifying a set of changes to one or more elements of value that will optimize enterprise cash flow, produce financial statements that identify value and value changes by element of value and combinations thereof

where the current operation value of each of one or more elements of value is reported in an enterprise balance sheet,

where the enterprise cash flow is modeled only after removing data associated with all enterprise growth options, and

where the predictive model is a model of actual and forecast cash flow.

45. The program storage device of claim 44 wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of: category of value, component of value, element of value, currency, unit of measure and combinations thereof.

46. The program storage device of claim 45, wherein the components of value are selected from the group consisting of revenue, expense, change in capital and combinations thereof.

47. The program storage device of claim 44, wherein the elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

48. The program storage device of claim 46, wherein at least part of enterprise-related data is entered for each point of time over a sequential series of points in time preceding a specified

valuation date.

49. The program storage device of claim 48, wherein the enterprise related data further comprise forecast event data and historical event data.

50. The program storage device of claim 49, wherein the enterprise related data further comprises transaction data.

51. The program storage device of claim 44 wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

52. The program storage device of claim 44, wherein the common schema further comprises a network model.

53. A computer-implemented method, comprising:

aggregating enterprise related data from a plurality of database management systems in accordance with a common schema,

storing said aggregated data in one or more tables or files to support processing for enterprise analysis and modeling,

analyzing at least a portion of said data with a series of models to identify one or more attributes for each of one or more elements of value that contribute to a value of the element of value and create a summary of said attributes,

developing a model of enterprise cash flow by a component of value that identifies a net contribution to cash flow for each element of value using said summaries,

using the model to calculate a current operation value contribution for each of one or more elements of value, and

preparing and presenting an enterprise financial statement that includes a current operation value for each of one or more elements of value

where the one or more elements of value comprise one or more intangible elements of value,

where the one or more attributes for each of one or more elements of value further comprise one or more value drivers,

where the enterprise cash flow is modeled only after removing data associated with all enterprise growth options, and

where the predictive model is a network model of actual and forecast cash flow where the data being analyzed is partitioned into a plurality of subsets, with each subset being processed by a

genetic algorithm independently of the others and where a selective crossover produces a chromosome exchange between the subsets, and

where the selective crossover occurs between two or more successive generations.

54. The method of claim 53, wherein the enterprise related data are aggregated in accordance with a common data dictionary that identifies a common set of attributes selected from the group consisting of category of value, component of value, element of value, currency, unit of measure and combinations thereof.

55. The method of claim 54, wherein one or more elements of value are selected from the group consisting of brands, customers, employees, production equipment, strategic partnerships, vendor relationships and combinations thereof.

56. The method of claim 53, wherein enterprise related data further comprises forecast event data and historical event data.

57. The method of claim 53, wherein the enterprise related data further comprises transaction data.

58. The method of claim 53, wherein said plurality of database management systems are obtained from the group consisting of advanced financial systems, basic financial systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, the Internet and combinations thereof.

59. The method of claim 53, wherein the common schema further comprises a network model.

65. A computer-implemented method, comprising:

automatically aggregating enterprise related event data from a plurality of database management systems into files or tables in a common database, thereby converting the data into a format that supports a common schema for analyzing and modeling an enterprise,

using neural network models to identify one or more performance indicators for each of one or more elements of value,

identifying one or more value drivers from said indicators and defining a contribution summary for each element of value for each component of value using said value drivers,

creating a model of current operation financial performance by element and component of value using said contribution summaries, and

simulating a current operation financial performance using said model as required to identify changes by element of value that will optimize one or more aspects of current operation financial performance

where the current operation financial performance is modeled only after removing data associated with all enterprise growth options,
where the elements of value are selected from the group consisting of brands, customers, employees, intellectual capital, partners, vendors, vendor relationships and combinations thereof, and
where the components of value are selected from the group consisting of revenue, expense, capital change and combinations thereof.

66. The method of claim 65, the method further comprising:
using a common data dictionary to identify a common set of attributes in the enterprise related data from the plurality of database management systems, the attributes including at least one of: component of value, currency, element of value, unit of measure, or a combination thereof;
automatically aggregating the enterprise related data from the plurality of database management systems using the identified common set of attributes.

67. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in at least one computer to perform an enterprise data integration and analysis method, comprising:
obtaining a plurality of data dictionaries and event data from a plurality of data sources via a network connection,
identifying one or more relationships between each data source data dictionary and an application database data dictionary,
converting said data source data to a common schema by using said relationships in an application software segment,
storing said converted event data in an application database for use in processing, and
analyzing said data using the enterprise cash flow model of claim 53 as required to forecast an impact of a response to one or more events from the plurality of events and optionally identify an optimal response to one or more events from the plurality of events
where a plurality of data sources further comprise a plurality of database management systems for applications selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof and
where event data comprise transaction data.

68. The computer readable medium of claim 67, wherein a common schema is defined by an application database schema.

69. The computer readable medium of claim 67, wherein a common schema further comprises a network schema.

70. The computer readable medium of claim 67, wherein a common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

71. A financial system, comprising:
a computer with a processor having circuitry to execute instructions;
a storage device available to said processor with sequences of instructions stored therein, an interface coupled to a plurality of data sources each of which has a data dictionary, and an application software segment which when executed causes the processor to:
obtain a plurality of data dictionaries and data from the plurality of data sources,
identify one or more relationships between each data source data dictionary and an application database data dictionary,
convert said data source data to a common schema by using said relationships,
store said converted data in an application database for use in processing,
analyzing at least a portion of said data with a series of models to identify one or more attributes for each of one or more elements of value that impact one or more components of value and a value of the element of value and create a summary of said attributes,
developing a model of an actual and a forecast enterprise cash flow by a component of value and element of value using said summaries, and
using the model to calculate a current operation value contribution for each of one or more elements of value and complete tasks selected from the group consisting of predicting an impact of a change to one or more elements of value on enterprise cash flow and identifying a set of changes to one or more elements of value that will optimize enterprise cash flow and combinations thereof
where the one or more elements of value are selected from the group consisting of brands, customers, employees, partnerships, vendor relationships and combinations thereof,
where the enterprise cash flow is modeled only after removing data associated with all enterprise growth options, and
where the cash flow for each element of value by a component of value comprises a net cash flow comprised of an element of value contribution to each component of value net of its impact on one or more other elements of value.

72. The system of claim 71, wherein a plurality of data sources further comprise a plurality of relational databases that use different data formats.

73. The system of claim 71, wherein an interface further comprises a network connection.

74. The system of claim 71, wherein a plurality of data sources further comprise database management systems for applications selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system,. a purchasing system, an intranet and combinations thereof.

75. The system of claim 71, wherein a common schema contains a common data dictionary that defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

76. The system of claim 71, wherein a conversion of data to a common schema further comprises an conversion of data that is completed automatically.

77. A computer implemented data method, comprising:
accessing a plurality of enterprise data and data dictionaries via a back-end interface coupled to a plurality of data sources,
identifying one or more relationships between each data source data dictionary and an application database data dictionary,
converting said enterprise data to a common schema by using said relationships in an application software segment, and
storing said converted data in an application database for use in processing,
analyzing at least a portion of said data to create a plurality of network models that identify a contribution for each of one or more elements of value to one or more aspects of current operation financial performance using said data,
using said models to calculate a current operation value contribution for each of one or more elements of value and to identify one or more changes by element of value that will optimize one or more aspects of current operation financial performance, and
displaying the one or more identified changes
where the one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, cash flow and combinations thereof,
where the aspects of financial performance are modeled only after removing data associated with all enterprise growth options,
where a common schema further comprises a network schema, and
where a plurality of data sources further comprise database management systems for a plurality of enterprise transaction systems.

78. The method of claim 77, wherein a back-end interface further comprises a network connection.

79. The method of claim 77, wherein the method further comprises accessing, converting, integrating and storing data from an Internet.

80. The method of claim 77, wherein a common schema further comprises a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

81. The method of claim 77, wherein a plurality of enterprise transaction systems are selected from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system, an Intranet and combinations thereof.

Evidence Appendix

Pages 40 - 46	excerpt from Everest document first submitted August 17, 2006
Pages 47 - 49	affidavit under Rule 132 first submitted November 5, 2007
Pages 49 – 53	4 pages returned to file wrapper on April 8, 2006
Pages 54 – 55	Petition-response dated August 27, 2004
Page 56	Page from November 30, 2007 Amendment/Reply
Page 57	Page from reference first submitted November 20, 2007
Page 58	Page from reference first submitted November 30, 2007

DATABASE MANAGEMENT

Objectives, System Functions, and Administration

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Objectives, System Functions, and Administration

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An organization cannot simply acquire a DBMS, plug it in, and watch it run. *A DBMS by itself has no data*, no stored queries or report definitions, and no user application programs to act on that data. The organization must collect and store (or convert) data, must train users, and must develop report definitions and application processes to operate in the new database environment.

As DBMSs become less costly, more comprehensive in capabilities, easier to use, and available on smaller systems (minicomputers and microcomputers), the countervailing forces diminish. In spite of the cost of a DBMS, an organization's need may be so overwhelming that waiting any longer would be an expensive mistake—as it becomes increasingly expensive to develop new applications using obsolete tools and methods.

2.4 OBJECTIVES OF DATABASE MANAGEMENT*

Having considered the various factors which can motivate an organization to move toward the database approach and acquire a DBMS, what are the objectives to be accomplished with such a move? This section outlines the various objectives an organization my have in moving to the database approach.

Motivators are problems an organization faces while objectives are the desirable end results stemming from a solution to those problems. An expression of objectives serves to focus attention on the needs of the using environment and the system and administrative requirements for meeting those needs. Some objectives of database management derive directly from the assumed context of organizations and management information systems.

The proper management of any resource involves making it available for its intended purpose and controlling its use so as to maintain its integrity, ensuring that it is used as intended and that it will be available for future use. *Management* implies both control and use. Database management encompasses the control and use of data resources in an organization. *Control* involves maintaining the existence and quality of the database and restricting its use to authorized people. Control seeks to maintain database integrity. *Use* of data resources leads to the objective of availability, which includes sharing present data resources and enhancing future availability. The objectives of sharability, availability, evolvability, and integrity are related as shown in Figure 2-2.

2.4.1 Sharability

An ability to share data resources is a fundamental objective of database management. In its fullest interpretation, this means different people and different processes using the same actual data at virtually the same time.

*An earlier version of the material in this chapter appeared in *Information Systems: COINS-IV*, Proceedings of the Fourth International Symposium on Computer and Information Sciences, Miami Beach, Florida, 1972 December 14-16, edited by Julius T. Tou, New York: Plenum Press, 1974, pages 1-35. Portions reprinted with permission.

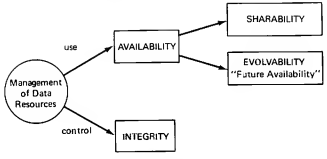

Figure 2-2. Objectives of Database Management.
The management of any resource involves both the use of that resource and the control of its use.

No person in an organization can act completely independently of everyone else in the organization. An organization brings together a variety of human talents to work together toward common goals. In working toward goals, people perform various operations and activities in varying degrees of cooperation or conflict. A database, whether or not it can be identified as a single physical entity, contains data relating to the primary and support operations of an organization. Sharing of data is a necessary first step toward a corporate database.

Since the data pertains to various aspects of the organization, it literally "belongs" to the whole organization and not to any one individual. A system which provides shared access to a corporate database is quite different from a typical time-sharing system where files are "owned" by individual users.* In organizations, shared files are the general rule and private files become the exception.

A shared database environment requires central control to coordinate the collection and use of data and to integrate the storage of data. This can result in increased consistency, reduced redundancy, and reduced effort in the capture and maintenance of data.

Rather far reaching ramifications stem from the stated objective of sharability:

- Serving different types of users with varying skill levels
- Handling different user views of the same stored data
- Combining interrelated data
- Setting standards
- Controlling concurrent updates so as to maintain data integrity
- Coordinating restart and recovery operations across multiple users

This list indicates some of the additional problems which arise in managing shared data. A central implication of sharing is that compromise will often be required be-

*The typical time-sharing system in university or scientific research environments permits sharing *time* on computer system resources. Time-sharing systems handle the private files of various participants in the environment. Each file has an owner, that is, a person who creates and maintains the file. Sometimes a person can use data with permission of the owner, or use data in a small "public file," which is usually read-only.

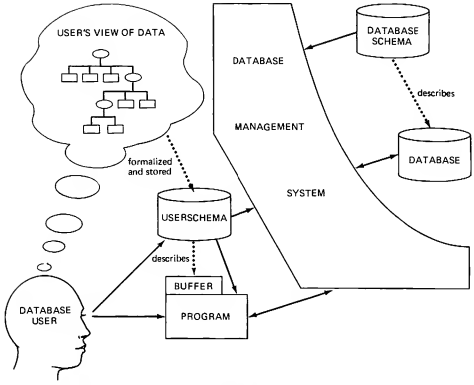

Figure 3-10. Userschema: Definition of a User's View of the Database.

Every user has some perception of the structure and content of the data being aeeessed at any given time. The userschema is a formal expression of the user's view of the database. It consists of:

- A logical data definition.
- Its physical representation in a program buffer, or on the screen or output page of a user's terminal.
- Its mapping to the data in the database.

The userschema may use different data names, reflect a different data structure, and refer to only portions of the database. The DBMS knows both the userschema and the database schema and can convert the data when transferred between the two according to the defined mapping. The usersehema is the fundamental component of a DBMS architecture for achieving sharability and evolvability.

As before, if the change to the schema only has an efficiency impact, it may be desirable to continue to execute the program with a fully defined userschema, omitting the fact that it was a copy of the (old) schema. The system would operate normally, testing for incompatibilities and performing any required conversions and transformations. The less efficient execution would be an interim solution until the program could be rewritten as priority demands on the human resources would permit. Again, the central point is that the using organization has a choice, based purely on economic grounds—the cost of running inefficiently versus the cost of reprogramming in order to run more efficiently in the future.

11.4 DATA CONVERSION PROCESSES

A data conversion process takes data in one machine readable form and converts into another form. Data conversion takes place during database creation, update, and in the schema-userschema mapping discussed earlier in this chapter. These processes are all members of a family of data conversion processes.

Referring to Figure 11-9, a general data conversion process takes as *input*:

- Existing mechanized data (in a database, an external file or a program buffer) called "source" data for the conversion process.
- Its complete definition, which may be separate and explicit, may be buried in a special-purpose conversion program, or may be assumed in a general conversion program which expects the existing data to be in a prescribed format and structure.
- The definition of the new "target" data to be generated by the conversion process. The target data definition may be complete or it may be incremental to the source data definition. Also, the mapping between the two definitions may be completely implicit or partly explicit where the conversion process cannot infer the association.

The conversion process produces as *output*:

- A new collection of data (in a database, external file, or program buffer) which conforms to the target data definition.

11.4.1 The Family of Data Conversion Processes

The family of data conversion processes includes mechanization, creation, update, revision, reversion,* and the schema to userschema conversion. These functions are shown in Figure 11-10 as they relate within the family. For clarity, the source and target data definitions required of each conversion process are not shown.

In a DBMS it is highly desirable for data conversion to be performed by the same underlying modules in the database control system. The availability of rich data conversion facilities in each of the members of the family of conversion processes determine the degree of overall data independence exhibited in the system, thus contributing

*Also called file writing or file generation (see section 7.1.3).

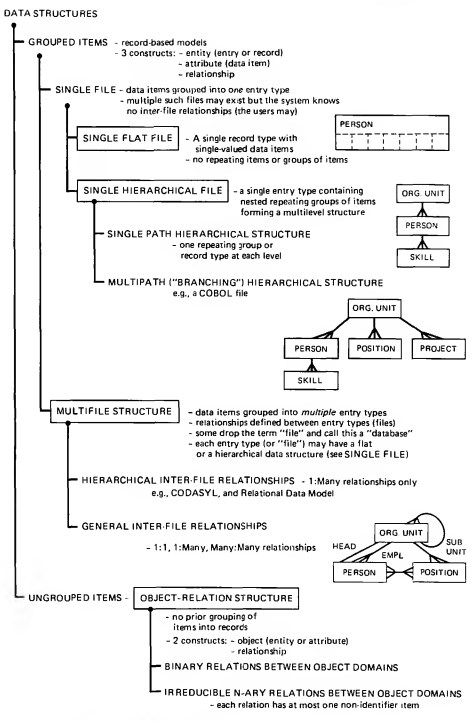

Figure 4-1. A Taxonomy of Data Structures.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. :	10/743,616
Applicant :	Jeff S. Eder
Filed :	22 December 2003
Art Unit ::	3692
Examiner :	Jennifer Liversedge
Docket No. :	AR - 61
Customer No. :	53787

DECLARATION UNDER RULE 132

I, Dr. Peter Brous, do hereby declare and say:

My home address is 17221 NE 8th Street, Bellevue, WA 98008. I have a B.S. degree in Finance from the University of Connecticut and a PhD in Finance from the University of Oregon.

I have worked in the finance field for 25 years, concentrating in the areas of corporate performance measures, business valuation, capital budgeting, and real option analysis. I have been a professor of finance at Albers School of Business and Economics at Seattle University for 15 years and was recently honored to hold the Dr. Khalil Dibee Endowed Chair.

I further declare that I do not have any direct affiliation with the application owner, Asset Reliance, Inc or its licensee Knacta, Inc. I met the inventor, the President of Knacta, Inc.,

for the first time on October 16, 2007. I understand that Knacta, Inc. has a license to the intellectual property associated with this application. I have had extremeley brief discussion of this patent application and the article cited below with the inventor.

On October 25, 2007 I was given a copy of "How to sort out the premium drivers of post deal value", by Daniel Bielinski published in Mergers and Acquisitions in July of 1993. Until that time I had not read the article. However, I have read many articles on the subject of Value Based Management. I have a strong understanding of the concept and practice of Value Based Management and have been teaching this concept for over 10 years. I have studied the entire article and I am totally familiar with the language of the article with the scope thereof.

Based on my experience and education in the field of finance, I have concluded that the the Bielinski article and Value Based Management does not inherently describe or enable: the development of a computational model of enterprise market value by element of value and segment of value where the elements of value are selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors and vendor relationships and the segments of value are selected from the group consisting of market sentiment, real option, derivative, excess financial asset.

There are several reasons for this:

1. As stated in the article VBM is similar to SVA. One of the ways it is similar is that it focuses on "value drivers" such as profit margin and growth instead of intangible assets as part of a tree based analysis of cash flow. Unlike SVA, VBM includes operational value drivers that drive the value drivers. However, these are generally not intangible elements of value. For example, Bielinski provides an example of breaking down profit margin by looking more closely at the cost of materials;

2. VBM is also similar to SVA in that it relies on the efficient market theory and this precludes the analysis of market sentiment;

3. SVA and VBM are tools that focus on the standard valuation model, a discounted cash flow model, that does not even consider the value associated with flexibility or decision making that is done sequentially and conditionally based on the arrival of new information. The valuation of this flexibility is the basis for valuation using real option analysis; and

4. Neither VBM or SVA address the valuation of derivatives.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed,

Dr. Peter Brous
Date: 10/31/2007

Phone calls were made. Attorney was unable to be located

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9/6/01

SEARCHED

Class	Sub.	Date	Exmr.
705	1, 7	11/11/03	HP
709	10 100-104		

SEARCH NOTES

	Date	Exmr.

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

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POSITION		ID NO.	DATE
CLASSIFIER		15	9/8/98
EXAMINER			
TYPIST		71417	9/10/98
VERIFIER			
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FILE MAINT.			
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INDEX OF CLAIMS

Claim	Date						
Final	Original	11					
	1	✓					
	2	✓					
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	6	✓					
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SYMBOLS

✓	Rejected
=	Allowed
- (Through numeral)	Cancelled
N	Restricted
I	Non-elected
A	Interference
O	Appeal
	Objected

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08/999245
12/10/97

PATENT APPLICATION

08999245

APPROVED FOR LICENSE ☐

INITIALS _____

CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application _____ papers.	
	2.	Oath signed 1-15 pages	9/21/98
	3.	~~Petition~~ Power Letter	Mailed 9/5/98
	4.	Missing Parts complete	11/4/98
	5.	Ltr & re-submitted drawings	July 12, 1999
	6.	Rec'd P/Attny	9/27/99
	7.	Copies P/Attny	9/29/99
	8.	Power To Inspect	9/29/99
7-31	9.	Restriction	8-01-00
	10.	Response to Restriction	9-5-00 9-1-00 sign
11-20	11.	Rej (3 mos)	11-21-00
	12.	Relocation	3/16/07
	13.	Notice of Allowance	12/7/07
	14.	Letter re Status of Abandonment	12-14-07
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AUG 27 2004

DIRECTOR'S OFFICE
TECHNOLOGY CENTER 3600

Jeffrey S. Eder
19108 30th Drive SE
Mill Creek, WA 98012

In re Application of
Jeffrey S. Eder
Application No. 08/999,245
Filed: December 10, 1997
For: A METHOD OF AND A SYSTEM FOR DEFINING AND VALUING ELEMENTS OF A BUSINESS ENTERPRISE

DECISION ON PETITION TO WITHDRAW THE HOLDING OF ABANDONMENT

This is in response to applicant's letter of December 14, 2001 requesting a copy of the Office action mailed on November 21,2000. This letter is being construed as a petition to withdraw the holding of abandonment under 37 CFR 1.181. The delay is considering this petition is sincerely regretted.

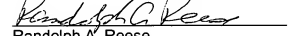
The petition is **GRANTED**.

A review of the file record indicates that this application was held abandoned on December 7, 2001 for failure to respond to the Office action within the statutory period of three months from the mailing date of November 21, 2000.

Applicant submits that the Office action was never received.

A review of the file reveals that a Revocation and Substitute Power of Attorney was filed September 5, 2000 and was entered into the file wrapper. However, it appears the papers were never processed and entered into the USPTO database. Thus, the Office action was not mailed to the new attorney of record, Todd M. Becker of Davis, Wright, Tremaine, LLP at the firm's address of 2600 Century Square, 1501 Fourth Avenue, Seattle, Washington 98101-1688. Subsequently, applicant filed another Revocation of Power of Attorney on March 16, 2001 that revoked all previous powers and returned power to applicant. This document was processed and a Notice to that effect was mailed on March 22, 2001, but the Office action of November 21, 2000 had been previously sent to the incorrect address and was never provided to applicant.

The application is being forwarded to the Supervisory Legal Instruments Examiner with instructions to withdraw the holding of abandonment and restore the application to pending status before re-dating and re-mailing the Office action to the updated correspondence address.



Randolph A. Reese
Special Programs Examiner
Technology Center 3600
(703) 308-2121

RAR: 8/25/04

USPTO Patent Full-Text and Image Database

Searching US Patent Collection...

Results of Search in US Patent Collection db for:
ACLM/"neural network": 3334 patents.
*Hits **1** through **50** out of **3334***

Next 50 Hits

Jump To

Refine Search aclm/"neural network"

	PAT. NO.		Title
1	7,302,339	T	Hazard countermeasure system and method for vehicles
2	7,302,229	T	Enabling desired wireless connectivity in a high frequency wireless local area network
3	7,302,102	T	System and method for dynamically switching quality settings of a codec to maintain a target data rate
4	7,302,089	T	Autonomous optical wake-up intelligent sensor circuit
5	7,301,093	T	System and method that facilitates customizing media
6	7,299,214	T	System for predictive analysis of time series data flows
7	7,299,123	T	Method and device for estimating the inlet air flow in a combustion chamber of a cylinder of an internal combustion engine
8	7,298,823	T	Method and device for user-specific parameterization of an x-ray device
9	7,297,129	T	Bed-side information system
10	7,296,734	T	Systems and methods for scoring bank customers direct deposit account transaction activity to match financial behavior to specific acquisition, performance and risk events defined by the bank using a decision tree and stochastic process
11	7,296,012	T	Method of and apparatus for multimedia processing, and computer product
12	7,296,009	T	Search system
13	7,296,007	T	Real time context learning by software agents
14	7,296,006	T	Method of inferring rotorcraft gross weight
15	7,295,977	T	Extracting classifying data in music from an audio bitstream
16	7,295,961	T	Method for generating a circuit model
17	7,295,867	T	Signal processing for measurement of physiological analytes

BP NEURAL NETWORK OPTIMIZATION BASED ON AN IMPROVED GENETIC ALGORITHM

BO YANG , XIAO-HONG SU, YA-DONG WANG

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E-MAIL: boy@mlg.hit.edu.cn, sxh@mlg.hit.edu.cn

Abstract:

An improved Genetic Algorithm based on Evolutionarily Stable Strategy is proposed to optimize the initial weights of BP network in this paper. The improvement of GA lies in the introducing of a new mutation operator under control of a stable factor, which is found to be a very simple and effective searching operator. The experimental results in BP neural network optimization show that this algorithm can effectively avoid BP network converging to local optimum. It is found by comparison that the improved genetic algorithm can almost avoid the trap of local optimum and effectively improve the convergent speed.

Keywords:

Evolutionarily stable strategy; Genetic algorithm; Neural network; Back propagation (BP) algorithm; Premature convergence

1 Introduction

In recent years, there have been many attempts in designing artificial neural networks automatically, in which the combination of evolutionary algorithms and neural networks has attracted a great deal of attention and one kind of evolutionary artificial neural network has been formed. Evolving neural networks by genetic algorithm were researched earliest of all.

The efficiency of GA has great influences on BP neural network (BPNN) optimization. During application of GA, however, there often exists a problem of premature convergence and stagnation [1]. Whitley think that selective pressure and selection noise are the main factors of affecting population diversity [2]. Higher selective pressure often leads to the loss of diversity in the population, which causes premature convergence at the same time of improving convergent speed. Therefore, keeping the balance between population diversity and convergent speed is very important to the performance of GA.

In recent years, many diversity preservation methods have been developed to avoid premature convergence to a local optimum. These can be divided into the following three subclasses:

1)Schemes of alleviating selective pressure to keep the biologic diversity, such as the modification of selection operator [3-5] and scale-transformation of fit function [6]. Unfortunately, these methods often cause another problem of slow rate of convergence or stagnation in searching global optimum at the same time of improving population diversity.

2)Non-static mutation rate control schemes including dynamic [7-10], adaptive or self-adaptive [10-12] mechanism to control the rate of mutation. The mutation operator is a main operator to keep the biologic diversity, especially in real-coded GA, because it introduces new search space and maintain the genetic diversity of a population, whereas the crossover operator only operates in the known search space. From this point of view, high mutation rate is good for searching the global solution. But too high mutation rate will result in blind stochastic search. It has been proved that deterministically varying mutation rates during the search have a better performance compared to the fixed mutation rate schemes. Unfortunately, there are some drawbacks in non-static mutation rate control schemes. The dynamic parameter control scheme requires for the user to devise a schedule specifying the rate at which the parameter is typically decreased. The self-adaptive scheme does not need such a specific schedule. Unfortunately it is rather complicated to explain to novice users, and as a result they usually prefer the simple fixed mutation rate scheme.

3)Spatial separation schemes [13-14]. One of the most important representatives is the distributed GA's (DGA's). Their premise lies in partitioning the population into several subpopulations, each one of them being processed by a GA independently of the others. Furthermore, a migration mechanism produces a chromosome exchange between the subpopulations. In this way, a distributed search and an effective local tuning may be obtained simultaneously. They are suitable for producing multi-resolution in search space but run risk of running too much CPU time.

A genetic algorithm based on evolutionarily stable strategy (ESSGA) is proposed in this paper to try to pursue better balance between population diversity and convergent speed by means of introducing a new kind of mutation operator under the control of a stable factor. Different from other mutation rate control schemes, this mutation operator only acts on some of the preponderant individuals under the control of a stable factor, which keeps the ratio of quantity

0-7803-7508-4/02/$17.00 ©2002 IEEE

US007251582B2

(12) **United States Patent**
Singh et al.

(10) **Patent No.: US 7,251,582 B2**
(45) **Date of Patent: Jul. 31, 2007**

(54) **FAULT DIAGNOSIS**

(75) Inventors: **Ritindar Singh**, Cranfield (GB); **Suresh Sampath**, Cranfield (GB)

(73) Assignee: **Rolls-Royce, PLC**, London (GB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 518 days.

(21) Appl. No.: **10/752,537**

(22) Filed: **Jan. 8, 2004**

(65) **Prior Publication Data**

US 2004/0216004 A1 Oct. 28, 2004

(30) **Foreign Application Priority Data**

Jan. 24, 2003 (GB) 0301707.6

(51) **Int. Cl.**
G06F 9/00 (2006.01)

(52) **U.S. Cl.** **702/183**; 702/185; 714/25

(58) **Field of Classification Search** 702/123, 702/179, 182, 183, 185, 186, 188; 705/7; 705/8; 706/13, 45; 714/48, 10, 25; 703/14
See application file for complete search history.

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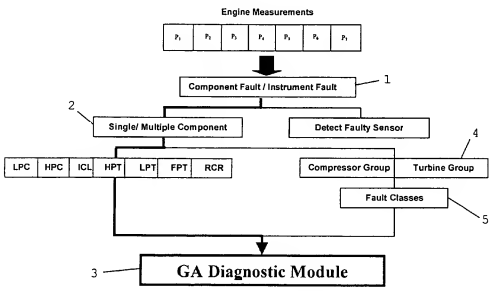
(Continued)

Primary Examiner—John Barlow
Assistant Examiner—John Le
(74) *Attorney, Agent, or Firm*—Oliff & Berridge, PLC

(57) **ABSTRACT**

Methods for estimating performance of and/or detecting faults in components of a multi-component system, where the performance of each component is defined by one or more performance parameters x related to measurement parameters z that can be expressed as a function of the performance and operating parameters defining an operating condition of the system. The methods include: defining a series of fault classes corresponding to possible outcomes of faulty components; creating an initial population of strings for each fault class, each including a plurality of elements corresponding to the performance and operating parameters, values being assigned to the string elements which represent estimated values of said parameters and are constrained only to indicate fault affected values for performance parameters of the fault affected component of the respective class; and optimising an objective function which gives a measure of the consistency between measured and calculated values of the measurement parameters.

14 Claims, 8 Drawing Sheets



Related Proceedings Appendix

09/761,671 – opinion appears to be based largely on an assumption that VBM is different than SVA in a number of areas where they are in fact the same (see pages 47 – 49).

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY SCOTT EDER

Appeal 2007-2745
Application 09/761,671
Technology Center 3600

Decided: August 29, 2007

Before TERRY J. OWENS, HUBERT C. LORIN, and ANTON W. FETTING, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Jeffrey Scott Eder (Appellant) seeks review under 35 U.S.C. § 134 of a Final rejection of claims 69-103, the only claims pending in the application on appeal.

We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6.

We AFFIRM.